

March 28, 1967

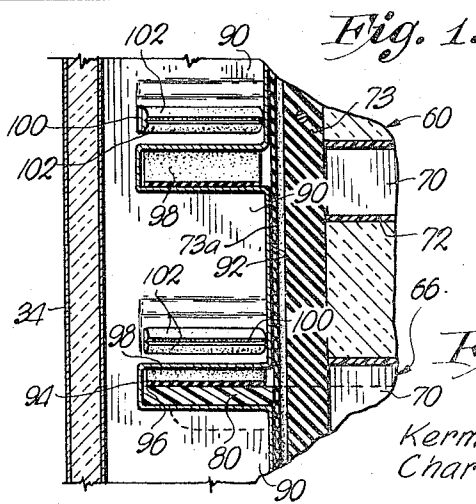
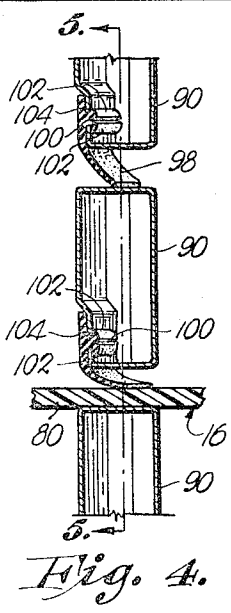
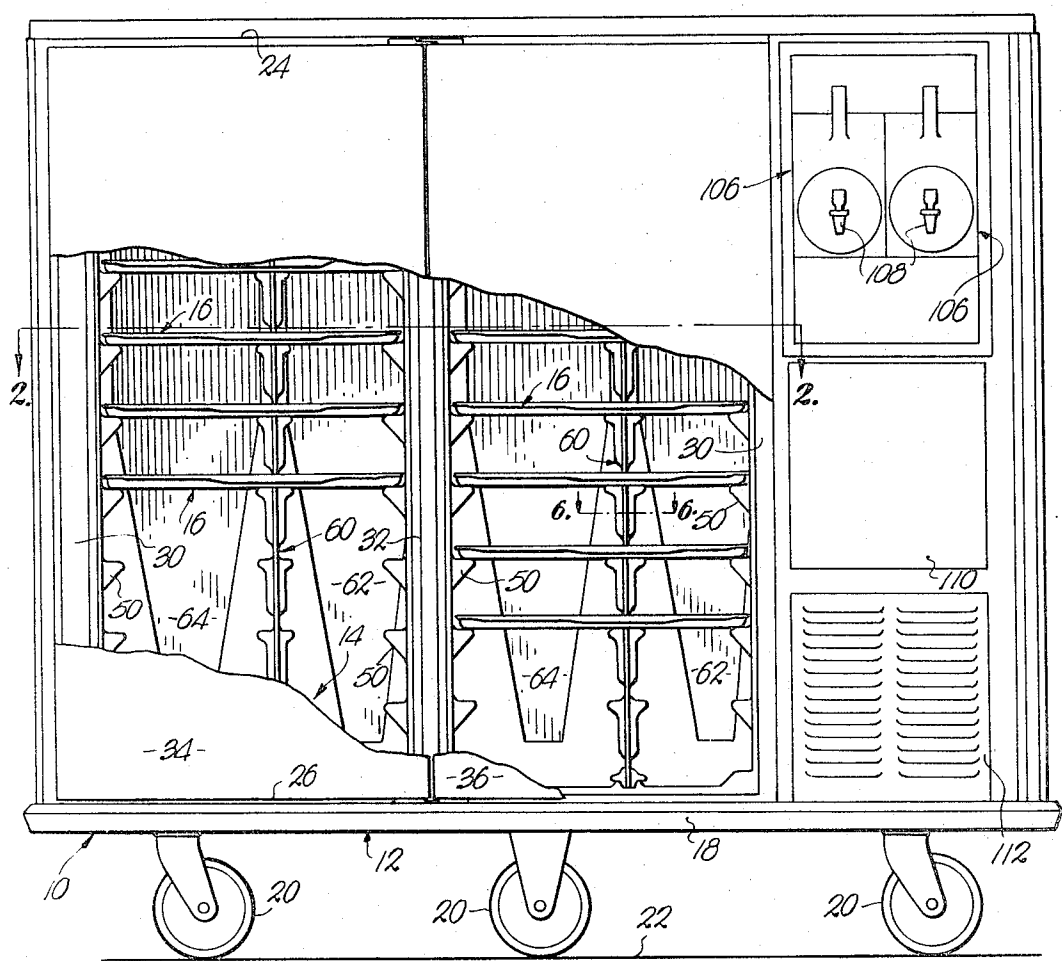
K. W. DYER ETAL

3,311,434

HOT AND COLD FOOD SERVING APPARATUS

Filed Sept. 29, 1965

2 Sheets-Sheet 1



INVENTORS.
Kermit W. Dyer
Charles A. Moss

BY *Honey, Schmid Johnson & Honey*
ATTORNEYS.

March 28, 1967

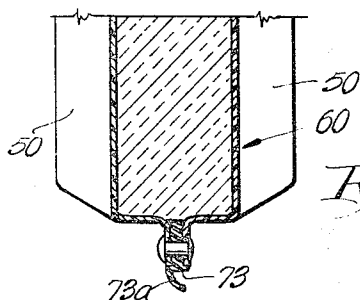
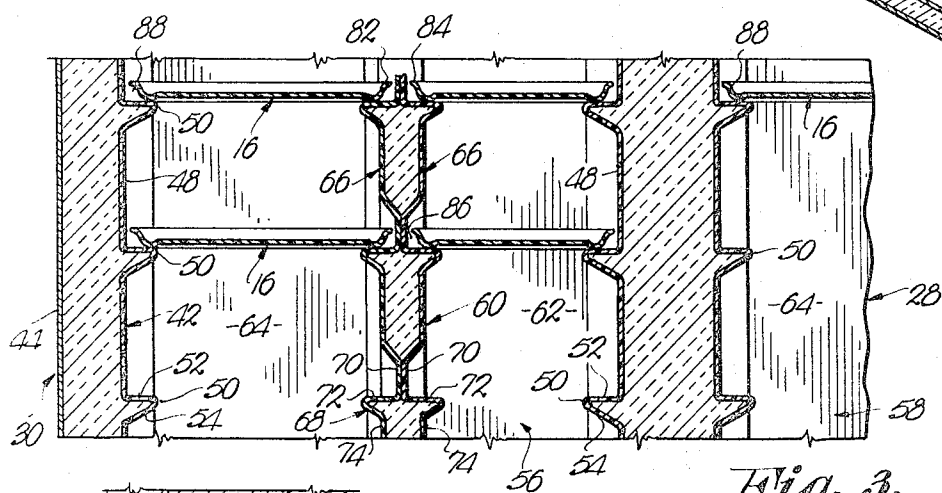
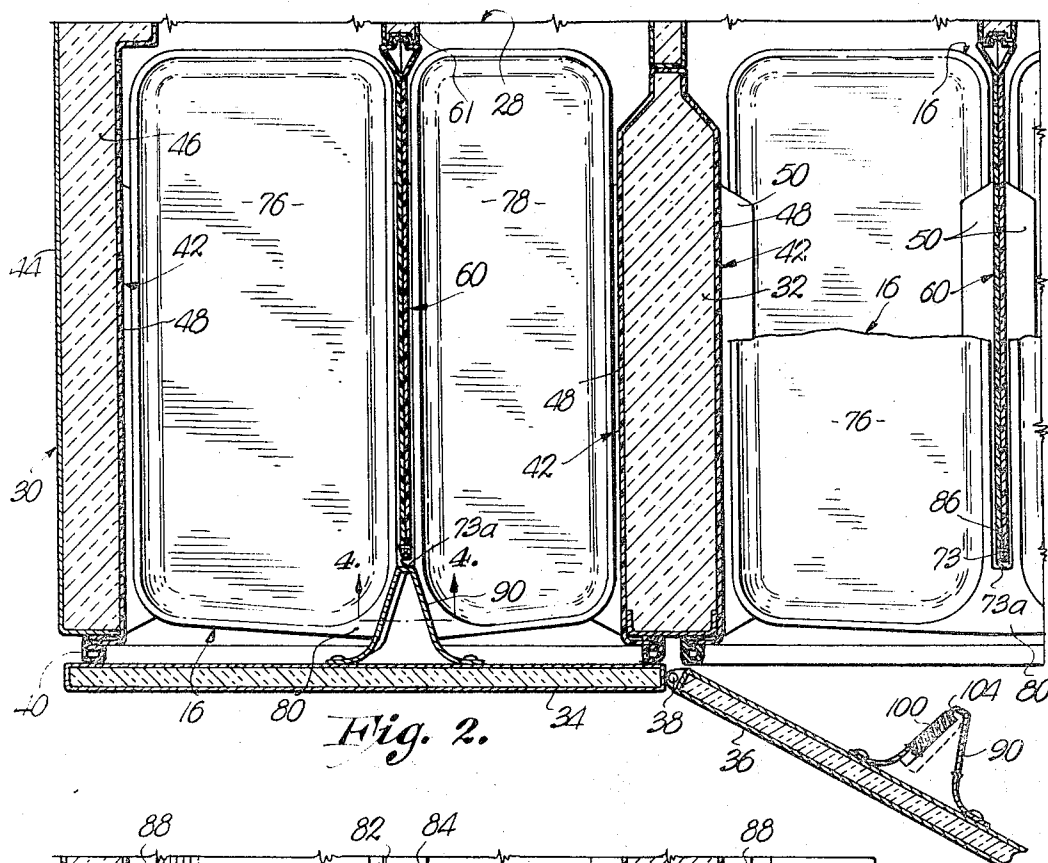
K. W. DYER ET AL

3,311,434

HOT AND COLD FOOD SERVING APPARATUS

Filed Sept. 29, 1965

2 Sheets-Sheet 2



INVENTORS.

Kermit W. Dyer
Charles A. Moss

Charles A. Moss

BY

BY *Hovey, Schmidt, Johnson & Hovey*
ATTORNEYS.

ATTORNEYS

1

3,311,434

HOT AND COLD FOOD SERVING APPARATUS

Kermit W. Dyer, Overland Park, Kans., and Charles A. Moss, Lee's Summit, Mo., assignors to Crimsco, Inc., Kansas City, Mo., a corporation of Missouri
Filed Sept. 29, 1965, Ser. No. 491,184
24 Claims. (Cl. 312-214)

This invention relates to article support means and, more particularly, to improvements in food serving apparatus for institutional use, such as hospitals or the like.

To serve both hot and cold food on the same tray in hospitals, means has been devised to maintain one section of the tray in a chilled atmosphere and another section of the tray in a heated region. To this end, such structure usually includes a cart having a housing thereon provided with means for supporting a plurality of the loaded trays, so that a number of patients can be served from the contents of one cart. The housing includes hot and cold chambers on opposed sides of and defined by a number of spaced, cantilever mounted, vertically aligned arms which extend laterally in a horizontal direction from the inner surface of the rear wall of the housing, access to the chambers being had by a door which normally closes the housing. The arms present slots therebetween for receiving the various trays, with a section of each tray being on a respective side of the adjacent arm and thereby in a corresponding chamber of the housing. This construction permits some degree of thermal isolation of the tray sections because of the provision of gasket seals in substantial closing relationship to the slots defined by adjacent arms and thus augmenting isolation of one chamber from the other chamber.

Special trays are employed having an elongated track portion of generally planar configuration between the separate sections of the tray. The flap gaskets provided on the arms for closing the slots therebetween engage the track portion of the trays when the latter are positioned in the cabinet. This is a serious problem because the gaskets extend substantially the full distance from front to rear of the cabinet and the gaskets thereby provide, in cooperation with the divider arms, the sole means for preventing interflow of air between compartments. In addition, these relatively long gaskets which engage the track of the tray during insertion and removal thereof, produce a frictional drag on the trays causing tray loading and removal difficulties as well as maintenance problems attributable to wear on the gaskets. These seals contact the proximal upper surfaces of respective trays and can, in fact, contact the food on the trays. This gives rise to cross-contamination inasmuch as the chambers are not always thoroughly sterilized after the trays are returned to the kitchen following the completion of a meal.

If the trays are warped, it is quite possible that they will not be readily received within the slots defined by adjacent arms so that either the tray must be discarded or it must be forced into the housing, depending upon the degree of warpage. If a tray is required to be forced into the corresponding slot, the food thereon might be spilled from the tray when the latter is removed for serving a patient.

Another attempt to answer the problem of providing a single tray for hot and cold food and which is adapted to be placed in a mobile cabinet having hot and cold compartments, is found in U.S. Patent No. 3,160,452 wherein slidable shutters are mounted on the support arms for closing the spaces therebetween when the trays have been removed from the cabinet. However, the divider mechanism suffers from many of the defects noted above and especially from mechanical problems associated with the movable shutters.

2

It is therefore to be noted that all prior machines which have been proposed for solving the problem have employed a divider partition provided with horizontal slots therein for slidably receiving respective trays therewithin and thus requiring some type of mechanical means for closing the slots the full front-to-back distance of the cabinet when the trays are not disposed therein. All structures thus far suggested for normally closing these slots have attendant problems and difficulties associated therewith which it is desirable be avoided.

The present invention provides improved food serving apparatus to overcome the disadvantages of the aforesaid conventional equipment, and to this end, is directed to a construction utilizing an upright, imperforate wall for separating the hot and cold chambers of a mobile housing. The invention further provides for the use of slotted trays, each having a pair of sections adapted to be placed into the hot and cold chambers of the housing as the tray is moved into the housing and receives the imperforate wall in the slot thereof. By virtue of this construction, the hot and cold chambers can be preheated and precooled respectively while the same remain thermally isolated from each other, all to the end that the food on the slotted trays will be maintained in a heated or cooled condition after the trays have been placed in the housing.

Moreover, the present invention obviates sealing means between the trays and tray supports by the use of the imperforate wall so that food on the trays will not be contacted by any part of the housing to thereby substantially eliminate contamination therewithin. The hot and cold sections of each tray, although interconnected by a cross member, will remain thermally isolated from each other from the time the tray is placed in the housing until the meal is consumed by the individual being served.

Provision may also be made to provide structure for both heating and cooling respective chambers of the housing, whereby the apparatus will be self-contained, can be preheated and precooled, and can keep food hot and cold for extended periods of time.

It is, therefore, the primary object of the present invention to provide improvements in article-support apparatus wherein articles placed on and supported by a pair of sections of a tray may be effectively isolated from each other whereby the concepts of this invention may be utilized for maintaining the sections of the tray out of heat exchange relationship to each other so as to permit control of the temperature of the articles on the tray sections.

Another object of this invention is to provide an improved tray for use with apparatus of the type described wherein the tray is provided with a central slot adapted to receive an upright, imperforate, insulating wall whereby the sections on opposed sides of the wall will be substantially thermally insulated from each other when the wall forms a part of a housing and which divides the latter into a pair of thermally isolated chambers.

A further object of this invention is the provision of improved food serving apparatus for institutional use wherein a pair of opposed sections of each of a plurality of food serving trays may be more effectively thermally isolated from each other than is capable with conventional food serving equipment and providing more efficient separation of the hot and cold chambers while at the same time substantially eliminating the danger of cross-contamination.

Yet another object of the present invention is the provision of an improved housing for apparatus of the aforesaid character wherein the housing not only provides space for the cross members which interconnect the food-supporting sections of each tray, but also includes sealing means on a swingable access door for effectively closing such space regardless of whether or not a tray

3

is disposed therein, whereby the hot and cold chambers of the housing will remain out of thermal interchange relationship with each other at all times when the door is closed.

In the drawings:

FIGURE 1 is a side elevational view of the food-serving apparatus of this invention, parts being broken away to show the relative dispositions of the food-serving trays and the way in which the trays are supported in vertically spaced relationship within an enclosed housing;

FIG. 2 is a fragmentary, horizontal section through the apparatus illustrating a pair of food-serving trays in respective compartments of the housing;

FIG. 3 is a fragmentary, vertical sectional view through the apparatus;

FIG. 4 is a cross-sectional view taken along line 4—4 of FIG. 2;

FIG. 5 is a cross-sectional view taken along line 5—5 of FIG. 4; and

FIG. 6 is a fragmentary, enlarged, horizontal cross-sectional view taken on line 6—6 of FIG. 1, showing the cross-sectional configuration of the sealing member provided on the outer upright edge of each of the removable divider walls.

The concepts of this invention are illustrated with reference to food-serving apparatus 10 comprising a wheeled cart 12 having a housing 14 thereon for containing a plurality of food-serving trays 16 therewithin, trays 16 being in vertically spaced relationship with respect to each other. Apparatus 10 is adapted for institutional use, such as in hospitals or the like, for serving a number of individual patients inasmuch as housing 14 is adapted for containing and supporting a relatively large number of trays 16.

Although apparatus 10, as described herein, is utilized for supporting and carrying trays of food, it is to be understood that the same may be utilized for handling other articles capable of being supported on one or more of the trays 16. A significant feature of apparatus 10 is the structure thereof which isolates one section of each tray 16 from another section. Thus, where it is desirable or necessary to segregate several different types of articles, apparatus 10 may be effectively employed especially where the articles are to be transported from place to place.

Cart 12 is provided with a base 18 having a number of supporting wheels 20 coupled thereto for movement over a supporting surface 22. Housing 14 is supported on base 18 and extends upwardly therefrom. Housing 14 is enclosed and is defined by a top 24, a bottom 26, a sidewall 28, and a pair of opposed, spaced end walls 30.

Housing 14 is preferably rectangular in configuration and is open at the side opposite to sidewall 28. A central partition 32 extends laterally from sidewall 28 and is illustrated in FIG. 2 and is substantially parallel with end walls 30. A pair of doors 34 and 36 are secured by a hinge 38 to the outermost extremity of partition 32 for movement into and out of closing relationship to the portion of the proximal open side of housing 14. Magnetic sealing devices are provided to releasably maintain doors 34 and 36 in their closed dispositions relative to respective end walls 30.

Although walls 28 and 30 and partition 32 may be of any construction, these components, as illustrated in FIG. 2, include a pair of inner, transversely U-shaped panels 42, each of a material having a relatively low thermal conductivity, such as plastic or the like, there being a panel 42 adjacent to and extending inwardly from each open side portion of housing 14.

A panel 44 surrounds the major outer portion of housing 14 and is spaced from corresponding panels 42 so that a mass 46 of insulating material, such as polyurethane foam or expanded polystyrene beads may be disposed between panels 42 and 44 to thermally insulate

4

the interior of housing 14 from the atmosphere surrounding the same. Similarly, insulating material is disposed within partition 32 between adjacent panels 42 for the same purpose. Doors 34 and 36 are also constructed of insulating and structural material therewithin, all to the end that the interior of housing 14 is insulated from the atmosphere when doors 34 and 36 are closed.

The outwardly facing sides 48 of panels 42 are provided with a plurality of vertically spaced, inwardly extending, substantially triangular, integral projections 50 which provide support means for respective trays 16, there being a projection 50 on one side 48 horizontally aligned with a corresponding projection 50 on the opposite side 48. Projections 50 extend along a substantial part of the horizontal width of the corresponding side 48 as illustrated in FIG. 2. Thus, the outer peripheral edges of tray 16 will be properly supported by corresponding aligned projections 50 in the manner illustrated in FIG. 3. For purposes of illustration, each projection 50 is integral with a corresponding side 48 and includes a horizontal segment 52 upon which the proximal peripheral edge of a tray 16 rests and an inclined segment 54 extending outwardly and downwardly from the innermost edge of the corresponding segment 52. Other means for supporting the tray edge may be employed if desired.

Partition 32 divides the interior of housing 14 into a pair of compartments 56 and 58, each compartment being adapted to receive a corresponding group of trays 16. To this end, it is to be noted that there is a panel 42 for each of the compartments. However, one of the compartments can be eliminated without departing from the scope of the invention. By the same token, additional compartments may be utilized on cart 12 to increase the tray capacity of apparatus 10.

Housing 14 further includes a pair of generally upright, imperforate divider walls 60, there being a divider wall 60 for each of the compartments 56 and 58. Each divider wall 60 is removably mounted within the cabinet and to this end, the inside, outwardly facing surfaces of the bottom, top and back wall structure of the cabinet are provided with integral, parallel, spaced, elongated protuberances 61 for slidably receiving corresponding edges of the panel. Cooperable, releasable fastening means, not shown in detail, is provided for maintaining the panel in proper disposition. The ready removability of wall panels 60 permits cleaning and sanitization thereof at frequent intervals as necessary for food service operations. Thus, the respective divider walls 60 separate the corresponding compartment into a pair of chambers 62 and 64, chamber 62 thus, for example, defining a cooled region and chamber 64 presenting a heated region although these regions may obviously be reversed as desired.

Each wall 60 is constructed from a pair of panels 66 which are coupled together in a manner to provide intermediate supports for the corresponding trays 16. Each panel 66, therefore, has a series of interconnected units 68 comprised of a first, normally upright portion 70, a second, intermediate, normally horizontal portion 72, and a third, lower downwardly extending portion 74 as illustrated in FIG. 3. Portions 70 of adjacent panels 66 are in substantial juxtaposition with respect to each other to minimize the thickness of wall 60 at that particular location. Portions 72 of panels 66 extend away from each other at the lowermost extremities of corresponding portions 70, portions 72 being substantially horizontally aligned with segments 52 of a pair of aligned projections 50. Thus, portions 72 provide additional support for a tray 16 intermediate the side edges of the latter. It is to be noted that portions 72 extend a substantial part of the full horizontal width of wall 60.

An upright sealing member 73 of transversely irregular configuration is provided between adjacent edges of the normally forwardmost vertical margin of each of the walls 60. Each sealing member is provided with an outer,

5

integral, flexible, normally transversely arcuate lip 73a disposed to engage the proximal surface of respective doors 34 and 36 in sealing relationship thereto.

Portions 74 are spaced apart and insulating material is disposed therebetween to thermally isolate chamber 62 from chamber 64. The lower extremities of portions 74 merge with the upper extremities of portions 70 at the tray station next adjacent thereto. Although the preferred construction of wall 60 has been described herein, it is understood that other constructions can be utilized if desired.

Each tray 16 is provided with a pair of sections 76 and 78 interconnected by a cross member 80 disposed at proximal ends thereof as illustrated in FIG. 2. Sections 76 and 78 are disposed in side-by-side relationship and are spaced apart with the proximal side edges 82 and 84 defining an elongated slot 86 which terminates adjacent to the corresponding cross member 80. The opposite end of slot 86 is open and the transverse width thereof is equal to or slightly greater than the combined thicknesses of portions 70 of wall 60 at the corresponding station. Thus, each tray, when the corresponding door is open, may be moved into the corresponding compartment with portions 70 of wall 60 being received within slot 86 and with sections 76 and 78 of the tray being positioned in chambers 64 and 62 respectively.

Each of the sections 76 and 78 has a peripheral lip 88 surrounding the same so that articles will not move laterally and off the section. Generally, edges 82 and 84 are substantially parallel with each other and the supporting surfaces of sections 76 and 78 are substantially coplanar. Each tray 16 is preferably formed from a material having a relatively low thermal conductivity so that sections 76 and 78 will remain thermally isolated from each other when the tray is in the particular compartment. Although cross member 80 physically interconnects sections 76 and 78, there will be very little heat transfer between the sections inasmuch as cross member 80 is of minimum dimensions and also is of a material having a relatively low thermal conductivity. Each tray 16 may be molded from a suitable material, such as plastic or the like, so that sections 76 and 78 and cross member 80 are integral with each other.

Although the preferred tray is illustrated in the drawings and described above, it is to be understood that sections 76 and 78 can be constructed separately and interconnected by a bridge corresponding to cross member 80. Such bridge may conveniently take the form of a snap lock device or clip readily removable from the tray sections or a connector permanently joined to the two tray sections 76 and 78.

Since the upright extremity of each wall 60 remote from sidewall 28 terminates in spaced relationship from the inner surface of the corresponding door, means is provided to close this space so that the corresponding chambers 62 and 64 will remain in thermal isolation with respect to each other when the door is closed. To this end, each of the doors 34 and 36 is provided with a plurality of vertically spaced, transversely triangular extensions 90, each having an inner face 92 when the door is closed. To this end, each of the doors 34 and 36 is provided with a plurality of vertically spaced, transversely triangular extensions 90, each having an inner face 92 which abuts the proximal upright sealing lips 73a of the member 73 of the corresponding wall 60 in the manner illustrated in FIGS. 2 and 5. Adjacent extensions 90 are interconnected by a strip 94 defining an inner face 96 for abutting the proximal outermost extremity of a corresponding cross member 80 as shown in FIG. 5.

A flap 98 of resilient material is provided for the space between each pair of adjacent extensions 90 as shown in FIGS. 4 and 5. Flaps 98 seal the last-mentioned spaces regardless of whether corresponding cross members 80 are in such spaces or not. As shown in FIG. 4, the upper flap 98 is disposed in sealing relationship to the space

6

when a cross member 80 is not in such space. The lower flap 98 is shown in sealing relationship to the upper surface of a corresponding cross member 80, the latter condition being obtained when the corresponding door is closed with the tray in position.

Each flap 98 has an inwardly extending projection 100 provided with wings 102 thereon, projection 100 extending into a slot 104 in one side of the corresponding extension 90. Wings 102 extend laterally from projection 100 and engage the proximal inner surface of the corresponding side to releasably lock flap 98 to the corresponding extension. Since the side carrying flap 98 is angularly disposed with respect to the corresponding wall 60, the corresponding flap is readily elevated when it initially contacts a cross member in the corresponding space. The resilience of each flap 98 returns the same to its disposition shown in the upper portion of FIG. 4.

Apparatus 10, as shown in FIG. 1, is further provided with a pair of beverage containers 106, each having a dispensing valve 108 associated therewith. Refrigeration means and heating means (not shown) are provided as component parts of apparatus 10 for respectively cooling chambers 62 and for heating chambers 64. Thus, apparatus 10 may be preheated and precooled before trays 16 are inserted therein. Also, a blower system may be provided for each of the chambers 62 and 64 so that the cooling and heating effects may be enhanced inasmuch as the cooled air and the heated air will be more uniformly distributed throughout the corresponding chambers.

Air passing over and about projections 50 gives rise to turbulence in the corresponding compartments so that the latter are more effectively heated and cooled in a minimum of time. Means may be provided to deactivate the blower systems of the various compartments when doors 34 and 36 are opened. Thus, there will be minimum heat transfer between the chambers and the atmosphere surrounding apparatus 10 during this time. Trays 16 will then be inserted in housing 14 as quickly as possible and then doors 34 and 36 are closed so as to maintain the cooled and heated conditions of chambers 62 and 64 respectively.

Apparatus 10 may also be provided with its own power source for operating the heating and cooling mechanisms thereof. To this end, battery means, fuel cell means or similar power supplies may be employed with and carried by apparatus 10 so that the latter will be self-contained and need not depend on external power sources.

Preferably, the cooling of chambers 62 will be effected by a refrigeration system placed at any suitable location on cart 12, desirably in the region adjacent to the louvered panel 112 shown in FIG. 1. For heating chambers 64 electrical resistance means may be employed and a control panel may be mounted in a suitable location for actuating the heating and cooling mechanisms.

In use, chambers 62 are preferably precooled and chambers 64 are preferably preheated with doors 34 and 36 closed and with no trays 16 in compartments 56 and 58. The blower systems of these compartments will assure uniform distribution of the heating and cooling air and projections 50 will cause the air flow to be turbulent rather than laminar so that the chambers will be precooled and preheated in a minimum of time.

Prior to the loading of apparatus 10, the various trays 16 are provided with the food to be supported thereby, the heated food on sections 76 and the food to be cooled on sections 78. Door 34 is then opened and trays 16 are loaded into compartment 56 in the manner shown in FIGS. 1 and 3. During this time, the blower systems of chambers 62 and 64 may be deactivated so that there will be a minimum of heat transfer between chambers 62 and 64 and the atmosphere externally thereof. Door 34 is then closed after compartment 56 has been filled, it being noted that each tray 16 is lifted and moved into the last-mentioned compartment with sections 76 and 78 on opposed sides of the corresponding wall 60. When

door 34 is closed, flaps 98 engage the adjacent cross members 80 in the manner shown in FIG. 4 so that chambers 62 and 64 of compartment 56 continue to be thermally isolated from each other notwithstanding the presence of trays 16 in compartment 56. Door 36 is then opened and compartment 58 is loaded in the same manner as described above, whereupon door 36 is then closed and apparatus 10 is ready for transit to the area housing the patients to be served.

Loading and removal of the trays, even though loaded with food into and out of the cabinet is facilitated by virtue of several important constructional features of the present design. First, the elongated slot between tray sections 76 and 78 provides clearance for respective divider walls 60 throughout the length of the tray so that there are no frictional forces imposed on the tray as it is being moved. Secondly, the divider walls 60 terminate short of a vertical plane through the front edges of the support projections 50 on walls 30 and 32 thereby permitting placement of the trays on respective projections for guidance into the cabinet before the tray sections 76 and 78 must pass on each side of divider wall 60. Additionally, the cross member 80 of each tray provides a convenient area for the person to grasp the tray as it is being inserted or removed from the cabinet. Such construction also minimizes the possibility of the person touching food on the tray.

During the transit from a kitchen to the patient's room, the food on sections 76 of tray 16 will remain in a heated condition, while the food on section 78 of these trays will remain in a cooled condition. Since cross members 80 are poor conductors of heat and do not extend the full length of the tray, sections 76 and 78 of trays 16 will remain substantially out of thermal interchange relationship with each other at all times, not only when the trays are in the machine, but also when delivered to the patient. Hence, even during the time when the patient is eating the food on the sections of a tray, the food will remain hot and cold respectively, the only heat transfer being between the food and the atmosphere surrounding the same.

The trays, following the completion of the meal, are placed in housing 14 and returned to the kitchen for cleaning. It is to be noted that there will be no substantial contamination within housing 14 inasmuch as no component part thereof will come in contact with the food on trays 16. Except for the elimination of food vapors from the interior of housing 14, the latter need not be cleaned except as desired or at periodic intervals to comply with health standards.

Walls 60, by providing an imperforate barrier between chambers 62 and 64, maintain the latter thermally isolated from each other and thereby preclude the requirement for gaskets or seals between trays as is necessary with conventional food-serving equipment. The split tray concept of this invention permits heated and cooled food to be simultaneously served to a patient and further assures that the temperature of the food within housing 14 will be controlled over extended periods of time.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A food-serving tray comprising:
 - a pair of generally rectangular sections each having a generally flat, food-supporting center portion, a pair of opposed sides and a pair of opposed ends, said sections being disposed in side-by-side, spaced apart relationship with their center portions substantially coplanar and their proximal sides substantially parallel; and
 - means extending between and interconnecting an end of one section and said sections adjacent one corresponding end thereof only, presenting an elongated slot open adjacent the other end of said sections and extending therefrom between said sections continuously to a zone adjacent said one end of said sections.

2. A food-serving tray as set forth in claim 1, wherein said interconnecting means comprises a cross member rigidly connected to each section adjacent said one end thereof to present a unitary tray assembly.

3. A food-serving tray as set forth in claim 2, wherein said cross member is formed from a material having a relatively low thermal conductivity.

4. Article supporting apparatus comprising:

an upright wall;

a tray having an open end, wall-receiving slot defining a pair of spaced sections adapted to be positioned on opposite sides of the wall, said slot having a transverse width at least equal to the thickness of said wall; and

means for releasably supporting the tray with a zone of said wall intermediate its upper and lower extremities extending into said slot between said sections, said wall extending above and below the tray and said sections disposed on opposed sides of said wall.

5. Article supporting apparatus as set forth in claim 4, wherein said tray has a pair of opposed ends, said slot extending inwardly from one of said ends and terminating adjacent the opposite end.

6. Article supporting apparatus as set forth in claim 5, wherein said tray includes a cross member rigidly interconnecting the sections and defining the opposite end of the slot.

7. Article supporting apparatus as set forth in claim 4, wherein said wall has a pair of spaced, generally upright, longitudinal edges, the distance between said edges adjacent said supporting means being at least equal to the length of said slot.

8. Article supporting apparatus as set forth in claim 4, wherein said supporting means includes a pair of elongated projections extending laterally from opposed sides of said wall and adapted to engage the underside of the tray to support the same.

9. Article supporting apparatus as set forth in claim 4, wherein said wall comprises a pair of panels, each panel having an upper, normally upright portion, an intermediate portion extending laterally from the lower extremity of said first portion, and a lower portion extending downwardly from said intermediate portion, the upper portions of said panels being in juxtaposition to each other and being receivable with said slot of the tray, the intermediate portions extending away from each other to define said supporting means and the lower portions being spaced apart.

10. Article supporting apparatus as set forth in claim 9, wherein said panels are formed of a material having a relatively low thermal conductivity, the space between said lower portions being filled with a heat insulating material.

11. Article supporting apparatus comprising:

an upright wall;

a plurality of trays, each tray having an open end, wall-receiving slot defining a pair of horizontally spaced sections adapted to be positioned on opposite sides of the wall, said slot having a transverse width at least equal to the thickness of said wall; and

means for supporting the trays in vertically spaced relationship with said wall extending into said slot of each tray, said wall extending above and below each tray and the sections of each tray disposed on opposed sides of said wall.

12. Article supporting apparatus as set forth in claim 11, wherein said wall is imperforate.

13. Article supporting apparatus comprising:

a housing having an opening;

means on said housing for removably closing said opening;

an upright wall within said housing and defining a pair of isolated chambers when said opening is closed; a tray having an open end slot defining a pair of spaced, article-supporting sections, said slot having a trans-

verse width at least equal to the thickness of said wall; and

means for supporting the tray after the latter has moved into said housing through said opening and in a direction to position said wall within said slot, whereby said sections are removably disposed in said chambers and are isolated from each other when said closing means closes said opening.

14. Article supporting apparatus as set forth in claim 13, wherein said wall and said housing are imperforate.

15. Article supporting apparatus as set forth in claim 14, wherein said wall, said housing, and said closing means each include structure formed from a material having a relatively low thermal conductivity whereby said chambers are thermally isolated from each other and from the atmosphere exteriorly of the housing when said tray is therewithin and when said opening is closed.

16. Article supporting apparatus as set forth in claim 15, wherein said tray includes a cross member interconnecting said sections at proximal ends thereof, said wall having an upright extremity adjacent to and spaced from said closing means when the latter closes said opening, said cross member being disposed within a portion of the space between said extremity of said wall and said closing means when said tray is within the housing and when said opening is closed, said closing means including a seal closing the remaining portion of said space.

17. Article supporting apparatus as set forth in claim 16, wherein said closing means includes a pair of spaced extensions disposed in positions above and below said cross member when said opening is closed, said seal including a flap carried by one of the extensions and engageable with said cross member, the latter normally being in engagement with the other extension, whereby the region between said extension is closed.

18. Food serving apparatus comprising:

- a housing having a sidewall, a pair of opposed end walls, a top and a bottom, said housing being open at the side thereof opposite to said sidewall;
- a central, upright partition within said housing and disposed for dividing the same into a pair of compartments;
- a door for each compartment respectively, the doors being mounted on said housing at said open side thereof for movement into and out of closing relationship to respective compartments;

an upright, imperforate divider wall for each compartment respectively, each wall extending inwardly from said sidewall and terminating at an elongated, upright extremity spaced inwardly from said open side, said wall defining a pair of chambers for the corresponding compartment;

a plurality of food-serving trays, each having a pair of opposed end margins and an open end slot extending inwardly from one of said margins toward the other margin, said slot terminating in close proximity to and being spaced from said other margin to define a pair of spaced, food-supporting sections on opposed sides of the slot and a cross member interconnecting said sections at said other end margin, said trays being adapted for disposition within respective compartments at corresponding, spaced, tray-receiving locations therewithin with the cross member of each tray being disposed within a portion of the space between the extremity of the adjacent divider wall and the corresponding door when the

latter closes the corresponding compartment, the slot of each tray having a transverse width at least equal to the thickness of said divider wall at the corresponding location, whereby each tray may be positioned with said divider wall disposed in the corresponding slot and with the corresponding sections on opposed sides of the divider wall;

means within each compartment respectively for supporting said trays at respective tray-receiving locations therewithin; and

means for sealing the space between said extremity of each divider wall and the corresponding door and including structure permitting said cross members of corresponding trays to be disposed in respective portions of the space to thereby maintain the chambers of the corresponding compartment isolated from each other when the trays are in the compartment and the latter is closed by the corresponding door.

19. Food serving apparatus as set forth in claim 18, wherein said tray-supporting means includes a pair of spaced, aligned, inwardly extending projections for each tray respectively, said trays being removably disposed on respective projections.

20. Food serving apparatus as set forth in claim 18, wherein said tray supporting means includes a number of spaced, laterally extending, horizontally aligned projections on an end wall, said partition and a divider wall at each tray-receiving location respectively.

21. Food serving apparatus as set forth in claim 18, wherein said sealing means is secured to and extends inwardly from each door respectively.

22. Food serving apparatus as set forth in claim 18, wherein said structure includes a movable flap for each tray-receiving location respectively, the flaps being disposed for normally closing said space between the extremity of a corresponding divider wall and a corresponding door and being movable to positions permitting the cross members of said trays to be disposed in said space when the trays are in the corresponding compartment, said flaps maintaining the corresponding chambers isolated from each other when said flaps are in said positions.

23. Food serving apparatus as set forth in claim 22, wherein each door is swingably mounted on said housing, and wherein is provided a plurality of spaced extensions projecting inwardly from each door respectively, each flap being carried by a corresponding extension and spanning the space between the latter and the adjacent extension.

24. Food serving apparatus as set forth in claim 22, wherein each door is swingably mounted on said housing, each flap being coupled with a corresponding door for movement therewith and being angularly disposed with respect thereto.

References Cited by the Examiner

UNITED STATES PATENTS

2,610,483	9/1952	Deering	62—129
3,040,735	6/1962	Lyon	126—376
3,135,457	6/1964	Risucci	229—51
3,160,452	12/1964	Rothman	312—236

FOREIGN PATENTS

13,109	1890	Great Britain.
--------	------	----------------

CHANCELLOR E. HARRIS, *Primary Examiner.*